

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) An antenna enabling the shaping of at least one beam of radioelectric waves (4, 5, 61, 62, 91, 92) of at least one determined wavelength, of the type comprising at least one radiating element (2) the waves ~~preferably passive~~, placed in a set of wires or bars (1) reflective of the wave and substantially parallel to one another, made of a Photonic Band Gap (PBG) material and forming a determined structure, said determined structure including defects so as to shape said at least one beam in a direction relative to the position and/or of the configuration of said defects,

~~characterised in that~~ wherein said wires or bars and the defects are arranged on a set of N concentric closed curves of a plane, N being greater than or equal to two, the radiating element being arranged inside the innermost curve and the distance between the curves is smaller than a quarter of the wavelength, the length of a wire/bar being greater than or equal to half the wavelength.

2. (currently amended) The An-antenna according to
claim 1, ~~characterised in that~~ wherein the curves are selected
among the circles, the ellipses, the cycloids and, ~~preferably,~~
are all circles, the radiating element being placed substantially
in the common centre of said circles.

3. (currently amended) The An-antenna according to
claim 1, ~~characterised in that~~ wherein the wires/bars or defects
adjoining a given curve are arranged in transversally equidistant
locations.

4. (currently amended) The An-antenna according to
claim 3, ~~characterised in that~~ wherein the transversal distance
of the adjoining wires/bars or defects are all equal for all the
curves.

5. (currently amended) The An-antenna according to
claim 4, ~~characterised in that~~ wherein the curves are circles and
that the wires/bars or defects are arranged in at least two
concentric circles around the radiating element substantially
central according to a constant transversal periodic
distribution, equal for all the circles.

6. (currently amended) The An-antenna according to
claim 1, ~~characterised in that~~ wherein the wires/bars or defects
are arranged along distribution axes running through the
radiating element and in the plane, in points corresponding to
the crossing of the curves and of the distribution axes.

7. (currently amended) The An-antenna according to
claim 6, ~~characterised in that~~ wherein the distribution axes are
spaced regularly in the plane over 360° and divide it into equal
angular sectors, the value of an angular sector being ~~preferably~~
 22.5° or a multiple of 22.5° .

8. (currently amended) The An-antenna according to
claim 7, ~~characterised in that~~ wherein the curves are circles and
that the wires/bars or defects are arranged in at least two
concentric circles around the radiating element substantially
central according to a constant angular periodic distribution,
equal for all the circles.

9. (currently amended) The An-antenna according to
claim 1, ~~characterised in that~~ wherein the radiating element is
omnidirectional and is ~~preferably~~—a dipole, said dipole being
than arranged substantially parallel to the wires/bars.

10. (currently amended) The An-antenna according to
claim 1, ~~characterised in that~~ wherein the wires/bars are
straight.

11. (currently amended) The An-antenna according to
claim 1, ~~characterised in that~~ wherein the wires/bars are curved.

12. (currently amended) The An-antenna according to
claim 1, ~~characterised in that~~ wherein said defects are realised
by removing at least partially certain of said wires/bars, said
at least one beam being shaped in a direction relative to the
position and/or of the configuration of the wires/bars withdrawn.

13. (currently amended) The An-antenna according to
claim 1, ~~characterised in that~~ wherein at least certain of said
wires/bars are each formed of at least two conductive segments,
the maximum length of a segment being smaller than a quarter of
the wavelength and ~~preferably~~ smaller than or equal to the tenth
of the wavelength, the adjoining segments of a wire/bar being
separated by insulators, each wire/bar with several insulated
segments therebetween, designated discontinuous wire/bar (11),
being transparent for the wave and equivalent to the defect of a
wire/bar at least partially withdrawn.

14. (currently amended) The An-antenna according to
claim 13, characterised in that wherein all the wires/bars are
wires/bars with several segments.

15. (currently amended) The An-antenna according to
claim 13, characterised in that wherein at least one of the
insulators separating two adjoining segments in a wire/bar
comprises or is formed of a switchable active component which may
adopt-adopts at least one first conductive state for the wave,
wherein the wire/bar with several segments behaves like a
reflector, designated continuous wire/bar (10), and a second
insulating state for the wave wherein the wire/bar with several
segments is transparent for the wave and equivalent to the defect
of a wire/bar at least partially withdrawn, and in that said
antenna includes moreover control means of said active
components, enabling to force certain of said wires/bars with
several segments to behave like discontinuous wires/bars (11),
said at least one beam being shaped in a direction relative to
the position and/or the configuration of the discontinuous
wires/bars.

16. (currently amended) The ~~An~~-antenna according to
claim 15, ~~characterised in that~~ wherein in a wire/bar with
segments and active switching components, the control is
conducted by section(s) formed of a sub-assembly of adjoining
segments of the assembly of the segments of the wire/bar, whereas
the sub-assembly ~~may include~~ includes from two up to the total
number of segments of the wire/bar, the components separating the
segments of a section being placed into their first state, the
other components being in the second state, in order to be able
moreover to direct the beam(s) in height relative to the plane.

17. (currently amended) The ~~An~~-antenna according to
claim 15, ~~characterised in that~~ wherein the control means of the
active components constitute shaping and switching means between
at least one first beam and at least one second beam, so that
said antenna is a beam-switching antenna.

18. (currently amended) The antenna ~~Antenna~~-according
to claim 1, ~~characterised in that~~ wherein it is in a public or
private civilian telecommunication network.

19. (currently amended) A base transceiver station of a radiocommunication system with mobile stations, ~~characterised in that~~ wherein it includes at least one beam-switching antenna according to claim 17.

20. (new) The antenna according to claim 1, wherein the radiating element is passive.